1/2" (12.7 mm) Ten Turn Wirewound Bushing Mount Precision Potentiometer

**FEATURES**
- Large range of ohmic values: 100 Ω to 100 kΩ
- Smallest size available on the market
- Very easy and accurate adjustment

**QUICK REFERENCE DATA**

<table>
<thead>
<tr>
<th>Sensor type</th>
<th>ROTATIONAL, multi turn wirewound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output type</td>
<td>Output by turrets</td>
</tr>
<tr>
<td>Market appliance</td>
<td>Professional</td>
</tr>
<tr>
<td>Dimensions</td>
<td>1/2&quot; (12.7 mm)</td>
</tr>
</tbody>
</table>

**ELECTRICAL SPECIFICATIONS**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>STANDARD</th>
<th>SPECIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Resistance</td>
<td>100 Ω to 100 kΩ</td>
<td>115 kΩ max.</td>
</tr>
<tr>
<td>Standard Range Tolerance</td>
<td>± 5 %</td>
<td>± 2 %</td>
</tr>
<tr>
<td>Linearity (independent)</td>
<td>± 0.30 %</td>
<td>± 0.15 %</td>
</tr>
<tr>
<td>Noise</td>
<td>100 Ω ENR</td>
<td></td>
</tr>
<tr>
<td>Electrical Angle</td>
<td>3600° +15° -0°</td>
<td></td>
</tr>
<tr>
<td>Power Rating</td>
<td>2.0 W at 40 °C ambient, derated to zero at 125 °C</td>
<td></td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>100 MΩ minimum, 500 VDC</td>
<td></td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>500 V_RMS, 60 Hz</td>
<td></td>
</tr>
<tr>
<td>Absolute Minimum Resistance</td>
<td>Linearity x total resistance or 0.5 Ω, whichever is greater</td>
<td></td>
</tr>
<tr>
<td>End Voltage</td>
<td>Linearity x total applied voltage for total resistance above 20 Ω, 2.0 % of total applied voltage for 20 Ω and below</td>
<td></td>
</tr>
</tbody>
</table>

**ORDERING INFORMATION**

```
1 6 2 B 1 2 0 3 2 0 3 X X X X
```

- **MODEL STYLE GANGS OHMIC VALUE**
  - **GANGS No 1**
    - **OHMIC VALUE**
      - GANGS No 1
        - B: bushing
        - S: servo
        - GANGS: 1
  - **OHMIC VALUE GANGS No 2**
    - GANGS: 1
  - **Special Request**: xxxx

**PART NUMBER DESCRIPTION**

```
162- 1 1 103 203 xxxx
```

- **MODEL STYLE GANGS OHMIC VALUE**
  - **GANGS No 1**
    - **OHMIC VALUE**
      - GANGS: 1
  - **OHMIC VALUE GANGS No 2**
    - GANGS: 1
  - **Special**: xxxx
Model 162
Vishay Spectrol

DIMENSIONS in inches (millimeters)

Model 162B/162-1...

MTG. FACE

SCEWDRIVER SLOT
0.025 WIDE (0.64) x 0.037 DEEP (0.94)

1/4 - 32 UNEF-2A

3 TERMINALS EQUALLY SPACED ON A 0.300 Ø (7.62)

TOLERANCES: UNLESS OTHERWISE NOTED.
DECIMALS ± 0.005 ANGLES ± 2°

MECHANICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>STARTING</th>
<th>RUNNING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Rotation</td>
<td>3600°, +15° -0°</td>
<td></td>
</tr>
<tr>
<td>Bearing Type:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torque (Maximum)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STARTING</td>
<td>0.8 oz. - in (57.60 g - cm)</td>
<td></td>
</tr>
<tr>
<td>RUNNING</td>
<td>0.6 oz. - in (43.20 g - cm)</td>
<td></td>
</tr>
<tr>
<td>Mechanical Runouts (maximums):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft (TIR)</td>
<td>0.003&quot; (0.08 cm)</td>
<td></td>
</tr>
<tr>
<td>Pilot Dia. (TIR)</td>
<td>0.003&quot; (0.08 cm)</td>
<td></td>
</tr>
<tr>
<td>Lateral (TIR)</td>
<td>0.005&quot; (0.13 cm)</td>
<td></td>
</tr>
<tr>
<td>Shaft End Play</td>
<td>0.010&quot; (0.25 cm)</td>
<td></td>
</tr>
<tr>
<td>Shaft Radial Play</td>
<td>0.003&quot; (0.08 cm)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>0.3 oz. (8.50 g) maximum</td>
<td></td>
</tr>
<tr>
<td>Stop Strength</td>
<td>20 oz. - in (static) (1.44 kg - cm)</td>
<td></td>
</tr>
</tbody>
</table>

MATERIAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing and Lids</td>
<td>Molded, glass filled, thermoset plastic</td>
</tr>
<tr>
<td>Bushing</td>
<td>Brass, nickel plated</td>
</tr>
<tr>
<td>Shaft</td>
<td>Stainless steel, non-passivated</td>
</tr>
<tr>
<td>Terminals</td>
<td>Brass, plated for solderability</td>
</tr>
<tr>
<td>Bushing Mount Hardware</td>
<td></td>
</tr>
<tr>
<td>Lockwasher Internal Tooth:</td>
<td></td>
</tr>
<tr>
<td>Panel Nut:</td>
<td>Steel, nickel plated</td>
</tr>
<tr>
<td></td>
<td>Brass, nickel plated</td>
</tr>
</tbody>
</table>

ENVIRONMENTAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibration</td>
<td>15 g thru 2000 Hz</td>
</tr>
<tr>
<td>Shock</td>
<td>50 g</td>
</tr>
<tr>
<td>Salt Spray</td>
<td>48 h</td>
</tr>
<tr>
<td>Rotational Life</td>
<td>500,000 shaft revolutions</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-55 °C to +125 °C</td>
</tr>
</tbody>
</table>

Note
- Nothing stated herein shall be construed as a guarantee of quality or durability.

MARKING

<table>
<thead>
<tr>
<th>Unit Identification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units shall be marked with Vishay Spectrol name and model no, resistance and resistance tolerance, linearity, terminal identification and date code</td>
<td></td>
</tr>
</tbody>
</table>
POWER RATING CHART

RESISTANCE ELEMENT DATA

<table>
<thead>
<tr>
<th>STANDARD RESISTANCE VALUES (Ω)</th>
<th>RESOLUTION (%)</th>
<th>OHMS PER TURN</th>
<th>MAXIMUM CURRENT AT 40 °C AMBIENT (mA)</th>
<th>MAXIMUM VOLTAGE ACROSS COIL (V)</th>
<th>WIRE TEMP. COEF. (ppm/°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>0.092</td>
<td>0.092</td>
<td>141</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>200</td>
<td>0.069</td>
<td>0.138</td>
<td>100</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>500</td>
<td>0.049</td>
<td>0.245</td>
<td>63</td>
<td>32</td>
<td>20</td>
</tr>
<tr>
<td>1K</td>
<td>0.047</td>
<td>0.470</td>
<td>45</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>2K</td>
<td>0.038</td>
<td>0.763</td>
<td>32</td>
<td>64</td>
<td>20</td>
</tr>
<tr>
<td>5K</td>
<td>0.031</td>
<td>1.56</td>
<td>20</td>
<td>100</td>
<td>20</td>
</tr>
<tr>
<td>10K</td>
<td>0.025</td>
<td>2.55</td>
<td>14</td>
<td>140</td>
<td>20</td>
</tr>
<tr>
<td>20K</td>
<td>0.020</td>
<td>3.94</td>
<td>10</td>
<td>200</td>
<td>20</td>
</tr>
<tr>
<td>30K</td>
<td>0.018</td>
<td>5.34</td>
<td>8.2</td>
<td>246</td>
<td>20</td>
</tr>
<tr>
<td>50K</td>
<td>0.015</td>
<td>7.64</td>
<td>6.3</td>
<td>315</td>
<td>20</td>
</tr>
<tr>
<td>100K</td>
<td>0.013</td>
<td>13.2</td>
<td>4.5</td>
<td>450</td>
<td>20</td>
</tr>
</tbody>
</table>

MARKING
Example of a marking for a standard part: 162-11103
Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.